DEKALB®

salutes the
American Farmer

DEKALB

The American Farmer: World's Most Important Businessman

DEKALB would like your help in spreading this important message. We have available a set of educational materials designed to increase the public's understanding of agriculture. The materials include an 8-page booklet that gives an overall view of agriculture, an 8½" x 11" stand-up display card and a 17" x 22" wall poster — both of which pay tribute to the American farmer, and a 5-part series of articles for use in local newspapers.

We're distributing the materials to banks, doctors' offices, supermarkets, restaurants and other public places. If you would like to help distribute the materials, please write for a free supply at the following address:

The American Farmer
DEKALB AgResearch, Inc.
Sycamore Road
DeKalb, Illinois 60115

(Please designate quantities needed of each piece)

CONTENTS

Corn Planting Guide 2

Plant Population Per Acre 4

Sorghum Planting Guide 6

Converting to No. 2 Corn 8

Hundredweight — Bushel Conversion 10

Row Length to Equal an Acre 12

Figuring Acreage 14

Crib and Bin Capacity 16

Silo Capacity 18

Grain Shrinkage 20

Weights and Measures 22

Corn Planting Guide

Allows for 15% loss from planting to harvest

Harvest Population of	Planting Rate	Inches Between Kernels When Planting At Different Row Widths				
		20"	30"	36"	38"	40"
16,000	requires 18,800	16.8	11.0	9.2	8.7	8.3
17,000	20,000	15.6	10.5	8.7	8.3	7.8
18,000	21,200	14.8	9.9	8.2	7.8	7.4
19,000	22,300	14.2	9.4	7.7	7.4	7.1
20,000	23,500	13.2	8.9	7.4	6.9	6.6
22,000	25,900	12.0	8.1	6.7	6.3	6.0
24,000	28,200	11.0	7.5	6.1	5.8	5.5
26,000	30,600	10.2	6.8	5.6	5.4	5.1
28,000	33,000	9.6	6.4	5.3	5.0	4.8
30,000	35,300	8.8	6.0	4.9	4.6	4.4

Note: The relationship between planting rate and harvest stand in above table is a general guideline allowing for a 15% loss from planting to harvest. Actual loss may be greater than or less than 15% depending on conditions after planting.

PLANT POPULATION PER ACRE

Average Plant Spacing In Inches	Plants Per Acre by Row Width					Average Plants Per 50' Row
	20"	30"	36"	38"	40"	
5.5	56,500	37,600	31,400	29,700	28,200	108
5.7	54,400	36,200	30,200	28,600	27,200	104
6.0	52,300	34,800	29,000	27,500	26,100	100
6.2	50,200	33,400	27,900	26,400	25,100	96
6.5	48,100	32,100	26,700	25,300	24,000	92
6.8	46,000	30,700	25,600	24,200	23,000	88
7.0	44,800	29,900	24,900	23,600	22,400	85
7.3	42,900	28,600	23,800	22,600	21,400	82
7.5	41,800	27,900	23,200	22,000	20,900	80
7.8	39,700	26,500	22,100	20,900	19,900	76
8.0	39,200	26,100	21,800	20,600	19,600	75
8.3	37,600	25,100	20,900	19,800	18,800	72
8.5	36,600	24,400	20,300	19,300	18,300	70
8.8	35,600	23,600	19,700	18,700	17,800	68
9.0	34,500	23,000	19,200	18,200	17,300	66
9.3	33,500	22,300	18,600	17,600	16,700	64
9.5	33,000	22,000	18,000	17,400	16,500	62
10.0	31,400	20,900	17,400	16,500	15,700	60
10.3	30,300	20,200	16,800	16,000	15,200	58
10.5	29,800	19,900	16,600	15,700	14,900	57
10.7	29,300	19,500	16,300	15,400	14,600	56
11.0	28,500	19,000	16,000	15,000	14,300	55
11.5	27,200	18,100	15,100	14,300	13,600	52
12.0	26,100	17,400	14,500	13,800	13,100	50
12.5	25,100	16,700	13,900	13,200	12,500	48
13.0	24,000	16,000	13,400	12,700	12,000	46
13.5	23,200	15,500	12,800	12,200	11,600	44
14.0	22,400	14,900	12,200	11,800	11,200	42
15.0	20,900	13,900	11,600	11,000	10,500	40

Sorghum Planting Guide

Plants per acre	Average Number Inches Between Seeds in Rows This Distance Apart				Approx. Lbs. per acre
	40"	30"	20"	10"	
	FOR FULL IRRIGATION				
150,000 to	0.7	1.0	1.4	2.8	14
100,000	1.1	1.4	2.1	4.3	9
	FOR PARTIAL IRRIGATION AND FAVORABLE DRYLAND				
80,000 to	1.3	1.8	2.7	5.3	7
40,000	2.6	3.5	5.3	10.7	4
	FOR DRYLAND				
20,000	5.3	7.1	10.7	21.4	2

*Based on planting treated seed, 16,000 seeds per pound, germinating 85% allowing for 20% loss to growth hazards.

CONVERTING HARVESTED YIELD TO NO. 2 CORN*

Moisture in Kernels	Lbs.Ear Corn Per Bushel	Lbs.Shelled Corn Per Bushel
11%	63.3 lbs.	53.17 lbs.
12	64.2	53.77
13	65.2	54.39
14	66.2	55.02
15	67.3	55.67
16	68.4	56.33
17	69.6	57.01
18	70.8	57.71
19	72.1	58.42
20	73.4	59.15
21	74.8	59.90
22	76.2	60.67
23	77.7	61.45
24	79.2	62.26
25	80.7	63.09
26	82.2	63.95
27	83.7	64.82
28	85.2	65.72
29	86.7	66.65
30	88.2	67.60
31	89.9	68.58
32	91.7	69.59
33	93.6	70.63
34	95.6	71.70
35	97.7	72.80
36	99.9	73.94

*From Master's Thesis by Elmer E. Remmenga, Purdue University.

Example: If you harvest 198,000 lbs. shelled corn from 18 acres, the average lbs. per acre is 11,000. Grain moisture is 19%. From the table, one bushel at 19% moisture should equal 58.42 lbs. Dividing 11,000 by 58.42 gives a yield of 188.3 bu. per acre.

Row Length To Equal An Acre

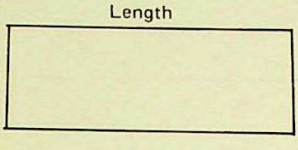
Row Width (in.)	Feet	Yards	Rods	Chains	1/100 Acre, Feet & Inches
20	26,136	8,712	1,584	396.0	261'5"
28	18,669	6,223	1,132	282.8	186'8"
30	17,424	5,808	1,056	264.0	174'2"
36	14,520	4,840	880	220.0	145'2"
38	13,756	4,585	834	208.4	137'7"
40	13,068	4,356	792	198.0	130'8"

FIGURING ACREAGE

1 acre = 43,560 sq. ft.

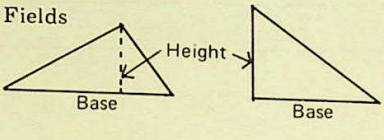
$$\text{Acres} = \frac{\text{Area in sq. ft.}}{43{,}560}$$

Rectangular or Square Fields



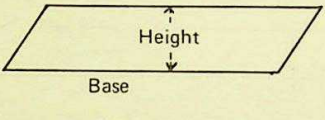
$$\text{Acres} = \frac{\text{Length X Width (in ft.)}}{43{,}560}$$

Triangular Fields



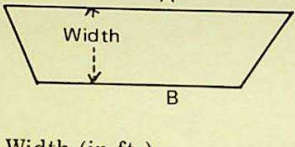
$$\text{Acres} = \frac{\text{Base X Height (in ft.)}}{2 \text{ X } 43{,}560}$$

Parallelogram (opposite sides parallel)



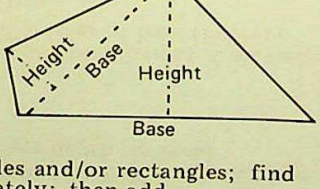
$$\text{Acres} = \frac{\text{Base X Height (in ft.)}}{43{,}560}$$

Trapazoid (two sides parallel)



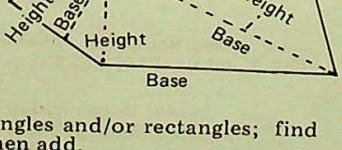
$$\text{Acres} = \frac{(A + B) \text{ X Width (in ft.)}}{2 \text{ X } 43{,}560}$$

No Two Sides Parallel



Divide into triangles and/or rectangles; find area of each separately; then add.

More Than Four Sides



Divide into triangles and/or rectangles; find area of each; then add.

Alfalfa Alfalfa Alfa

Crib and Bin Capacity

Shelled Corn Formulas

Rectangular Bin
Bushels = 0.8 X length X width X average depth (all in feet)

Round Bin
Bushels = 0.6283 X diameter X diameter X average depth (in feet)

Ear Corn Formulas

Rectangular Crib
Bushels = 0.4 X length X width X average depth (in feet)

Round Crib
Bushels = 0.31416 X diameter X diameter X average depth (in feet)

Piled Grain

Shelled Corn
Bushels = 0.20944 X height X diameter of base X diameter of base (in feet)

Ear Corn (shelled basis)
Bushels = 0.10472 X height X diameter of base X diameter of base (in feet)

Alfalfa Alfalfa Alfa

GRAIN SHRINKAGE*

(14.0% moisture basis for grain sorghum and 15.5% for corn)

Initial Moisture Percent	% Shrink when dried to 14%	% Shrink when dried to 15.5%	Initial Moisture Percent	% Shrink when dried to 14%	% Shrink when dried to 15.5%
14.5%	1.08	——	25.0	13.29	11.74
15.0	1.66	——	25.5	13.87	12.33
15.5	2.24	——	26.0	14.45	12.93
16.0	2.83	1.09	26.5	15.03	13.52
16.5	3.41	1.68	27.0	15.62	14.11
17.0	3.99	2.28	27.5	16.20	14.71
17.5	4.57	2.87	28.0	16.78	15.29
18.0	5.15	3.46	28.5	17.36	15.89
18.5	5.73	4.05	29.0	17.94	16.48
19.0	6.31	4.64	29.5	18.52	17.07
19.5	6.90	5.23	30.0	19.11	17.66
20.0	7.48	5.83	30.5	19.69	18.25
20.5	8.06	6.42	31.0	20.27	18.84
21.0	8.64	7.01	31.5	20.85	19.44
21.5	9.22	7.60	32.0	21.43	20.03
22.0	9.80	8.19	32.5	22.01	20.62
22.5	10.38	8.78	33.0	22.59	21.21
23.0	10.97	9.38	33.5	23.18	21.80
23.5	11.55	9.97	34.0	23.76	22.40
24.0	12.13	10.56	34.5	24.34	22.99
24.5	12.71	11.15	35.0	24.92	23.58

*This figure includes the moisture shrink plus ½% handling shrink.

Alfalfa Alfalfa Alfa

WEIGHTS AND MEASURES

Weight (Ordinary Commodities)

1 long ton	= 2240 pounds
1 short ton	= 2000 pounds
1 hundredweight (cwt.)	= 100 pounds
1 stone	= 14 pounds
1 pound (lb.)	= 16 ounces
1 ounce (oz.)	= 16 drams

Linear Measure (Length)

1 league	= 3 miles
1 mile	= 5280 feet or 320 rods
1 furlong	= 40 rods
1 rod	= 16½ feet
1 yard	= 3 feet
1 foot	= 12 inches

Square Measure (Area)

1 acre	= 160 square rods or 43,560 square feet
1 sq. rod	= 30¼ square yards
1 sq. yard	= 9 square feet
1 sq. foot	= 144 square inches

Cubic Measure (Volume)

1 cubic yard	= 27 cubic feet
1 cubic foot	= 1728 cu. inches
1 cord (4' x 4' x 8')	= 8 cord feet
1 cord foot (4' x 4' x 1')	= 16 cubic feet

Dry Measure

1 bushel	= 4 pecks
1 peck	= 8 quarts
1 quart	= 2 pints

Liquid Measure

1 gallon	= 4 quarts
1 quart	= 2 pints
1 pint	= 4 gills
1 pint	= 16 fluid ounces

Go for More in '74

DEKALB

Corn Corn Corn C
Grain Sorghum Gr
Forage Sorghum
Sudax Brand Sud
Alfalfa Alfalfa Alf
Wheat Wheat Wh
Wintergraze Brand
Corn Corn Corn C
Grain Sorghum Gr
Forage Sorghum
Sudax Brand Sud
Alfalfa Alfalfa Alf

DEKALB®

salutes the
American Farmer

DEKALB